

## REMARKS

This responds to the Final Office Action mailed on April 17, 2008. No claims are amended, canceled or added. Thus, claims 1-20 remain pending in this application.

### *§102 Rejection of the Claims*

Claims 1, 3, 6-7, 11-15 and 16-17 were rejected under 35 U.S.C. § 102(e) for anticipation by Seligman (US 6,151,400). Applicant respectfully traverses for at least the following reasons.

All of the claims refer to “apparent modulation.” Seligman does not reference apparent modulation. Applicant respectfully submits that one of ordinary skill in the art would understand “apparent modulation” upon reading and comprehending the application, including page 5 lines 13 to page 6 line 3, page 7 line 28 to page 9 line 8 of Applicant’s specification. As provided in Applicant’s specification at page 5 lines 17-19, apparent modulation occurs when the frequency of the signal is slightly removed from a rational factor of the sampling frequency. Applicant cannot find any express or inherent disclosure in Seligman that distortions arising from apparent modulation are inhibited.

The Office Action asserts:

*Seligman discloses a hearing aid for processing an input signal or an apparatus for processing a digital audio signal in Fig. 1, comprising: a microphone 10, a digital processor or detector including an inhibitor having an envelop detector for smoothing the input signal (envelope detector 17) to inhibits or excludes or reduces distortions arising from apparent modulation (inherent input signal modulation as discussed in Col. 1, lines 21-52) of input signal due to sampling of the input signal (col. 3 lines 21-26), and an adjust (VGA 11) to adjust amplification of the input digital audio signal.*

Applicant traverses this assertion of the Office, and respectfully submits that the Office mischaracterizes Seligman in this statement. The Office argues that Seligman shows an inhibitor having an envelope detector. However, the Office only identifies envelope detector 17 in Seligman. An inhibitor is not equivalent to the envelope detector. There is no express or inherent disclosure in Seligman that the envelope detector 17 smoothes the input signal to inhibit or exclude or reduce distortions from apparent modulation, as asserted by the Office. Seligman refers to the envelope detector at col. 2 lines 43-44, which states: *The amplifier output 20 is*

*processed by envelope detector 17 which rectifies signal 20 and removes the audio frequencies.*

Applicant respectfully asserts that this does not inhibit or exclude or reduce distortions from apparent modulation.

The Office asserts that that inhibiting or excluding or reducing distortions arising form apparent modulation is inherent. However, Applicant asserts that the Office has not provided evidence that supports the assertion of inherency.<sup>1</sup> The Office cites col. 1 lines 21-52; however this portion of Seligman refers to AGC gains. The Office also cites col. 3 lines 1-26; however, this portion of Seligman an analog to digital converter with a sample rate. Applicant finds no reference to inhibiting or excluding or reducing distortions arising form apparent modulation. The Office provided no evidence that makes clear that the missing descriptive matter is necessarily present in the reference, and that it would be so recognized by persons of ordinary skill.

Additionally, Applicant asserts that the reference needs to enable the claimed subject matter in order to anticipate the claims.<sup>2</sup> Applicant respectfully asserts that Seligman does not enable the subject matter that is presently claimed in this application.

With respect to independent claim 1, Applicant is unable to find, among other things, in Seligman a showing or suggestion of a hearing aid comprising, among other things, a digital processor to process the input signal at a gain, where the processor includes an inhibitor to inhibit distortions and an adjuster to adjust the gain of the input signal, and where the inhibitor smoothes an envelope of the input signal so as to inhibit distortions arising from apparent

<sup>1</sup> “To serve as an anticipating when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). “This modest flexibility in the rule that ‘anticipation’ requires that every element of the claims appear in a single reference accommodates situations where the common knowledge of technologists is not recorded in the reference; that is, where technological facts are known to those in the field of the invention, albeit not known to judges.” *Id.* at 1269. “[The inherent disclosure] must be necessarily present and a person of ordinary skill in the art would recognize its presence.”(emphasis added) *Crown Operations Intl. v. Solutia, Inc.*, 289 F.3d 1367, 1377 (Fed. Cir. 2002). An assertion of inherency can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

<sup>2</sup> In order to be anticipating, a prior art reference must be enabling so that the claimed subject matter may be made or used by one skilled in the art. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354 (Fed. Cir. 2003); *Helfix, Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000); *Akzo N.V. v. U.S. Int'l Trade Comm'n*, 808 F.2d 1471, 1479 (Fed. Cir. 1986). Prior art is not enabling so as to be anticipating if it does not enable a person of ordinary skill in the art to carry out the invention. See *Elan Pharms., Inc. v. Mayo Found.*, 346 F.3d 1051, 1057 (Fed. Cir. 2003).

modulation of the input signal due to sampling of the input signal, as recited in the claim. Claim 3 depends on claim 1 and is asserted to be in condition for allowance with respect to claim 1.

With respect to independent claim 6, Applicant is unable to find, among other things, in Seligman a showing or suggestion of a method comprising, among other things, sampling an input signal, and smoothing an envelope of the input signal where the smoothing inhibits distortions arising from apparent modulation of the input signal produced by sampling the input signal, as recited in the claim. Claim 7 depends on claim 6 and is asserted to be in condition for allowance with claim 6.

With respect to independent claim 11, Applicant is unable to find, among other things, in Seligman a showing or suggestion of an apparatus for processing a digital audio signal that includes an adjuster to adjust amplification of the digital audio signal, and a detector to form a smooth envelope that is a rectified version of the digital audio signal, where the detector presents the smooth envelope to the adjuster, and the smooth envelope excludes apparent modulation of the digital audio signal, as recited in the claim. Claims 12-15 depend on claim 11 and are asserted to be in condition for allowance with claim 11.

With respect to claim 16, Applicant is unable to find, among other things, in Seligman a showing or suggestion of a hearing aid for processing an input signal comprising, among other things, a sampler to sample the amplified input signal, a detector to form a smooth envelope that is rectified, and an adjuster to adjust the gain of the preamplifier if the smooth envelope is greater than a threshold to reduce distortions due to an apparent modulation arising from sampling of the amplified input signal, as recited in the claim. Claim 17 depends on claim 16, and is asserted to be in condition for allowance with claim 16.

§103 Rejection of the Claims

Claims 2, 4-5, 8-10 and 18-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Seligman in view of IBM (IBM Tech Disclosure Bulletin, 1993). Applicant respectfully traverses, asserting that the proposed addition of IBM to Seligman does not cure the deficiencies of the rejections of the independent claims using Seligman, as discussed above. Claims 2 and 4-5 depend on claim 1, and are asserted to be in condition for allowance with claim 1. Claims 8-10 depend on claim 6, and are asserted to be in condition for allowance with claim 6. Claims 18-20 depend on claim 16, and are asserted to be in condition for allowance with claim 16.

Office's Response to Applicant's Arguments

The Office responded to Applicant's previous arguments on page 5 paragraph 6. The Office indicated that "*the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.*"

The Office then stated: "*apparent modulation* is broadly interpreted as apparent infection or distortion to the input signal, since "modulation" is defined as infection or variation of amplitude or phase or frequency [of a signal].

The Office concluded: "*Seligman disclosed the AGC circuit with the envelop detector that is capable to limiting (inhibiting) the input signal distortion and infection (as shown in Fig. 2)." Thus met the broadly claimed "inhibit apparent modulation" as argued.*

Applicant respectfully asserts that the use of the term "apparent modulation" in the claims is proper. The meaning of "apparent modulation" as used in the claims is apparent from the descriptive portion of the specification (*see MPEP 608.01(o).*) Applicant respectfully submits that one of ordinary skill in the art would understand "apparent modulation" upon reading and comprehending the application, including page 5 lines 13 to page 6 line 3, page 7 line 28 to page 9 line 8 of Applicant's specification. As provided in Applicant's specification at page 5 lines 17-19, apparent modulation occurs when the frequency of the signal is slightly removed from a rational factor of the sampling frequency. Applicant can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification (*see MPEP 2173.01*).

As identified in MPEP 2111.01, Applicant acknowledges that, during examination, the claims must be interpreted as broadly as their terms reasonably allow. Applicant respectfully asserts that the Office's interpretation is not "reasonable." As further identified in this section of the MPEP, the Office must give the words of the claim their plain meaning unless the plain meaning is inconsistent with the specification. Applicant respectfully asserts that the Office (1) did not give the words their plain meaning, and (2) the meaning given the words is inconsistent with the specification.

(1) The Office has not given the words of the claim their plain meaning. As identified in MPEP 2111.01, plain meaning refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art, and the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the "ordinary" and the "customary" meaning of the terms in the claims.

(2) The Office's interpretation is inconsistent with the specification. Applicant respectfully asserts that "modulation" is not an "inflection." It appears that the Office may have intended "inflection" as in "an inflection of the tone or pitch of the voice" First Entry for "modulation." Merriam-Webster Online Dictionary. 2008 Merriam-Webster Online. 11 July 2008 Merriam-Webster Online Dictionary. 2008 , [http://www.merriam-webster.com/dictionary/modulation>](http://www.merriam-webster.com/dictionary/modulation). This definition which refers to changing the tone or pitch of a voice" is not a reasonable interpretation of modulation, as it is inconsistent with Applicant's specification. Further, it does not address "apparent modulation."

**Applicant respectfully requests that provide a citation where the Office is getting its definitions.** “Modulation” is not the same as “apparent modulation”. It appears that the Office is improperly taking a definition of “modulation” without considering the term “apparent modulation”.

The Office relies on FIG. 2 of Seligman as “*being capable of limiting (inhibiting) the input signal distortion and infection (as shown in Fig. 2)*” and asserts that this meets “*inhibit apparent modulation.*” FIG. 2 is identified as a simple analog implementation of the envelope detector and a standard “demodulation circuit” (col. 2 line 30-31 and col. 2 line 64 to col. 3 line 3). The envelope detector rectifies the signal and removes the audio frequencies (col. 2 lines 43-45). This is not limiting or inhibiting the input signal distortion. Rather, it detects an envelope, and there is nothing to indicate that the envelope detector would inhibit apparent modulation. As provided in Applicant’s specification at page 5 lines 14-19, apparent modulation occurs when the frequency of the signal is slightly removed from a rational factor of the sampling frequency. In this situation, the magnitude of the waveform appears as if it has been modulated so as to form an amplitude modulation, which periodically varies the true envelope of the signal (Applicant’s specification at page 5 lines 23-25).

Applicant respectfully asserts that the standard envelope detector of Seligman (e.g. col. 2 lines 30-32, lines 43-45, and 66 ff. would follow, rather than inhibit, the periodic variations of the true envelope caused by the apparent modulation..

### **CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6960 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 8-18-08

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 8 day of June, 2008.

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